Journal of the Amateur Photographic Society of Madras.

Vol. 2.—No. 11. Price As. 8.

October, 1896.

HIGHEST CLASS PHOTOGRAPHIC INSTRUMENTS.

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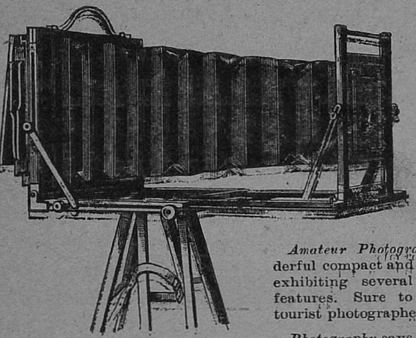

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Rapid Rectilinear Lens with Iris diaphragm	4	0	0	4	10	0	5	0	0	6	15	0	8	15	0	11	10	0
Solid Leather Travelling Case with spring lock ...	1	15	0	1	15	0	2	2	0	2	10	0	3	0	0	3	15	0
Rotating Turntable in base, and Tripod Stand ...	2	2	0	2	2	0	2	2	0	2	10	0	2	15	0	3	3	0
	17	9	0	18	7	0	21	9	0	25	15	0	31	2	6	39	8	0

Aluminium Fittings—Reduced Prices.

½-plate and 7½ x 5	8½ x 6½	10 x 8	12 x 10	15 x 12
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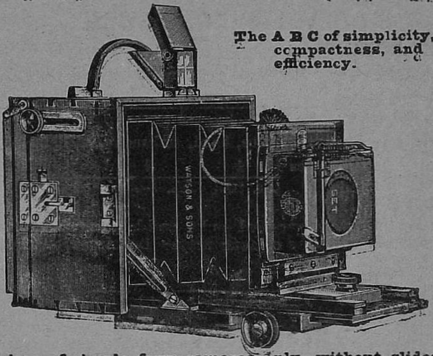

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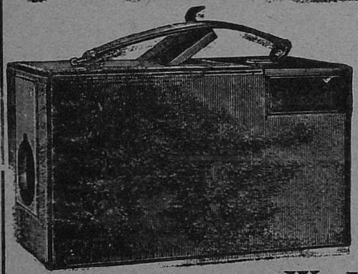

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¼-plate size for 12 Plates	10	10	0
¼-plate " " 24 Films	11	10	0

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Ammonia	... ...	0	6
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Do.	15 „ ...	2	8
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Hydroquinone	... „ ...	2	0

&c. &c. &c.

MADRAS, BANGALORE & OOTACAMUND.

Vol. II. No. 11. **October, 1896.**

Journal of the Amateur Photographic Society of Madras.

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EDITORIAL NOTES.

SOCIETIES affiliated to the Royal Photographic Society have hitherto not enjoyed much more than the privilege of paying their annual subscriptions and the honor of being affiliated. They are now to receive something more tangible from the parent society. We learn that a course of six lectures, illustrated by means of the optical lantern, will be delivered in London during this month, to which members of affiliated societies will be admitted free. These lectures, with the slides illustrating them, will then be placed at the disposal of affiliated societies, before which they can be read. We commend this to the notice of our worthy Honorary Secretary, who we doubt not will take steps to ensure that our society gets its share of the benefits of this kind, as far as possible. The subjects of the lectures are all of them highly practical, and they are to be handled by men who have claims to be considered authorities upon the subjects for which their names are put down. A list of them is given in our Home Letter.

ONE of the most extraordinary results of modern research and invention is the instrument for reproducing objects in motion. The kinetescope is probably familiar to most of our readers, but the small size of the image and the fact that only one person at a time can view the effect reproduced by the travelling film, on which the pictures are printed, are objections which have stood in the way of its being a complete success. By means of a recently invented apparatus, the images are enlarged to life size and are exhibited upon a screen, in this way permitting a large audience to see them at one and the same time. Besides the form of apparatus first shown in London, there are we learn now others upon the market, indeed we read that the projecting apparatus is already known under several names (Eidoloscope, Vitascope, Animatographie, Cinemato-

graph) though it seems that there is not much to choose between them as to their results. The general principle of the method is described as follows in the *British Journal of Photography* :—

"A band of sensitive film, about one and three-quarter inches wide, and some 150 feet long, is by means of suitable mechanism, exposed upon an object in such a manner that a series of successive exposures are made upon the band of film with a rapidity of from twenty-eight to fifty per second, each negative measuring about seven-eighths of an inch long and three-quarters of an inch wide. This band of film is then developed in large wooden tanks, fixed, washed, and dried, being afterwards run through a machine in contact with a second sensitive strip, upon which a series of positives are made by exposure to an electric light. This positive strip is developed and treated in the usual manner, the result being a succession of small lantern slides. This strip is punctured to fit the driving machinery, and is then run through the projecting apparatus at a very high speed, with the result that the object is reproduced upon the screen showing the exact motion and expression existent at the time of exposure. The method, then, consists in making a succession of negatives in as short a time as possible, and exhibiting positives made from them in such a manner as to make one succeed the other as rapidly as possible, the impression to the eye being that of continuous motion."

The projection of the image is said to be slightly imperfect on account of slight vibration and blurring of the pictures due to imperfection in the apparatus. No doubt it will only be a matter of time before the source of this trouble is removed.

It seems that lantern manufacturers have turned their attention to producing smaller and less expensive apparatus than those used by Mr. Birt Acres, and that there is likely to be on the market small portable apparatus, capable of being used in any sized room, very little larger than the ordinary single optical lantern, and capable of giving a well illuminated picture of eight-feet diameter. The probable price is said to be about £ 36, and the film bands about £ 3 to £ 5 each. The next thing that will be required after this will be a handy camera with view finder, stand, &c., for taking animated photographs. Until this is accomplished the Cinematograph must remain in the hands of a few only.

A CHEAP method of making acetylene was discovered about 18 months ago, and a great future was prophesied for it as an illuminant for the optical lantern, for photographic printing, for portraiture, and for many other purposes. As yet this gas has not come into such general use for these purposes as it was at first expected to. The difficulties apparently lay in the production of calcium carbide in sufficient quantity, and in the invention of a suitable generator and lamp in which the gas could be burned; but these difficulties we understand have now been overcome, and manufacturers are only waiting for an increased demand in order to reduce the price of the carbide. The present price seems to be about 6*d*. a pound, and that quantity is said to be capable of producing sufficient gas to burn for three hours, and to give a light which, though not equal to lime light or the electric light, will compare favorably with them, light for light, as to cost. The carbide is prepared by heating lime and carbon at a high temperature, and when the resulting compound is placed in water it gives off acetylene, leaving a residue of slaked lime. The substance must be kept from the influence of moisture, for when damp gets at it the above decomposition goes on slowly with evolution of the gas, which has an odour of its own—not exactly aromatic—accompanied by the degeneration of the material into slaked lime. But that is a difficulty which could probably be overcome—and it is a serious difficulty in this country—by having the carbide put up in small quantities, say ½ lb., in air-tight tins, the contents of which could be used up at one lantern show. An apparatus for generating and burning this gas in the optical lantern has, we read, been put on the market, by Messrs. Thorn and Hoddle (Camberwell New Road, London), and it is described by persons who have tried is as portable, safe and inexpensive. A correspondent writing to *Photography* states that the initial cost of the apparatus, including generator, special burner, and seven pounds of calcium carbide, was £ 1-16-7. Calcium carbide is procurable in Madras, but a suitable and safe lamp to burn the gas in we have not yet seen. Some of our enterprising local dealers should turn their attention to this quarter. Lantern exhibitions are far more popular here now than they used to be, and lanternists would throw away their oil lamps to-morrow if a fairly good illuminant could be substituted for them, not

involving the use of cumbrous apparatus or much expense. In acetylene there seems to be every prospect of such a desirable change being brought about.

LANTERN slide workers will welcome the conclusions (*Bulletin Belge*), recently put forward by Goderus and Dupont, that the variety of color to be obtained upon chloride transparencies depends upon the amount of bromide in the developer and the duration of development, and that it in no way depends upon the length of exposure. The instructions, formulated by the makers of a well known brand of transparency plates, lay down the time of exposure and development from two minutes for black tones to 36 minutes for red tones. A saving of much of this time, unnecessarily spent on a long exposure, will be a welcome change. Goderus uses a ferrous oxalate developer composed of 60 parts of a 30 per cent. sodium oxalate solution, 5 parts of a 30 per cent. ferrous sulphate solution, with 200 parts of a 10 per cent. solution of potassium bromide. The image is said to first come up yellow and goes through the whole scale of colors to a violet black. Dupont uses a six per cent. solution of sodium sulphite containing half per cent. of amidol, the plate being placed in this developer without washing after a previous soaking in a ten per cent. solution of ammonium bromide. The colour depends upon the duration of the soaking in the bromide solution, for if the plate be soaked in it for 10 seconds a green moonlight color is obtained, if for 25 seconds a darker green, if for 40 seconds a greenish-yellow, and if for 60 seconds a transparent black color. We recommend these results to our lantern slide workers for confirmation and report.

A METHOD of intensifying gelatine negatives without the use of mercury is described in the *Amateur Photographer*, and should be tried by members who may have occasion to practise intensification. The use of mercury is usually followed by ultimate deterioration of the intensified image, but an image built up of silver, as is the case in the following method, should be stable. There is this further advantage that the intensification can be carried out immediately after fixing, a short rinse under the tap being all that is required. Any one who has tried the mercury method, which necessitates previous removal of all the hypo. from the film, cannot fail to appreciate this advantage. The method is one which has been employed and is recommended by Mr. J. B. B. Wellington.

"A stock solution must first be prepared as follows:—

Silver nitrate	100 gr.
Distilled water	2 oz.

When dissolved, add—

Ammonium sulphocyanide ...	240 gr.

This will form a precipitate which will become dissolved. The solution must now be diluted to 10 ounces with distilled water, when another precipitate will be thrown out. To this solution add a saturated solution of hypo. sufficient to dissolve the precipitate; this forms the stock solution.

To intensify, take—

Stock solution	1 oz.

and add—

Pyro	3 gr.
Sodium sulphite	12 „
Ammonia	6 minims.
Ammonium bromide	2 gr.

Immerse the negative and rock the solution until the necessary degree of intensification is acquired, from five to ten minutes usually being sufficient to produce a dense negative from a very thin one without the slightest staining.

More ammonia may be added from time to time if the action is not sufficiently energetic. After treatment, the negative must be well washed."

THE same journal describes a method of restoring faded albumen prints, for which the Vienna Photographic Society awarded a medal to H. Landaurek.

"The stock solutions are:—

(A) Tungstate of soda ...	100 parts.
Distilled water	5,000 „
(B) Carbonate of lime (C. P.)	4 „
Chloride of lime	1 part.
Chloride of gold and sodium.	4 parts.
Distilled water	400 „

Solution B is made in a yellow glass bottle and allowed to stand for twenty-four hours before use. It is then filtered into another bottle of yellow glass and well corked.

A convenient method of using the solutions is to add from one to two drachms of B to five ounces of A. The well-washed prints are placed one at a time in the bath, about ten minutes being the time required to strengthen

the prints sufficiently. The resulting colour should be a beautiful clear purple. The strengthened prints must be then washed and passed into a fixing bath made by adding four drachms of hypo. to five ounces of A solution, where they must remain until any yellow colour that may be present is entirely gone. This sometimes requires as long as three hours; they must then be well washed."

THE *Japanese Edition of the Practical Photographer* is the special double number for September and it reflects great credit upon the Editor (our worthy home correspondent, Mr. Matthew Surface) and upon the publishers. The edition deals entirely with photography and photographers in Japan. It contains many interesting articles, and a large number of excellent reproductions of photographs of people and places in Japan. An edition such as this represents an amount of work, editorial and contributed, of which probably very few can have any idea. To add to the editor's troubles in the present instance, the case containing the manuscripts and photographs was lost for a time owing to the removal of a label. The precious consignment was at last found in the P. and O. Company's warehouse where it had been lying unclaimed for six months. Fortunately its contents were quite safe and undamaged. The edition is issued with a crinkled cover, which it is said took no less than twenty printings and occupied four or five months to crape and crinkle. An article on this curious process is promised in the *Process Work and the Printer*, with a copy of which we hope to be favored. Altogether, the Japanese number certainly takes the cake and is the best of the special numbers, the issue of which has been a recent feature of the *Practical Photographer*. It is well worth getting and we can recommend it to our readers as the best six-penny worth we have seen for a long time.

Messrs. Dawburn and Ward, Ltd., Publishers of the *Photogram*, have forwarded to us reprints, from the Photographic journal, of six lectures, which were delivered under the affiliation of Photographic Societies scheme, on *The Bichromate Salts in Photography*. These lectures comprise a scientific and historical review by Captain Abney, an account of the use of the bichromates in carbon printing, in collotype and Woodburytype, in photo-lithography and photo-zincography and photogravure by other well known authorities. Members interested in the subject can obtain the lectures from the Library, on application to the Honorary Secretary.

Messrs. R. & J. Beck, Ld., have sent us their illustrated catalogue of photographic lenses, cameras and apparatus manufactured by them. Besides their well known lenses and "The Frena," they stock almost everything that a photographer can require. Several pages are devoted to Frena apparatus, and workers with this well known hand-camera would be well served here. We further note the appearance of *The New Frena* hand-camera for films $3\frac{1}{2}$ in. × $2\frac{5}{8}$ in., the price of which with single lens sounds wonderfully cheap at £2-18-8.

Artistic Landscape Photography from the pen of another veteran photographer, Mr. A. H. Wall, is the most recent contribution to the study of the art aspects of photography. The publishers (Messrs. Percy Lund and Company) of Mr. Robinson's book, reviewed in a recent issue, have not lost much time in following that up with the work under review. Evidently they are making a determined effort to overtake lost time, for while the practice of pictorial photography has been rapidly extending of late years its literature has not been growing apace. Indeed, what literature there has been is scattered through various journals, and it is practically out of sight. The attempt to bring this scattered literature to a focus, and up to date, is evidently the aim of this enterprising firm, whose future designation we note is to be Messrs. Percy Lund, Humphries & Co. The printing, the binding, and the illustrations are a credit to them. Mr. Wall appeals to "beginners in art," who he boldly says "although they may be accomplished photographers, are not artistic." The book is in the nature of essays upon such subjects as "Truthfulness in Art," "The Imagination and its Cultivation," "The Expression of Space," and they are all worthy of careful study. Mr. Wall combines a large store of knowledge of what has been written by art writers with a fluent style of expression, and he has the knack of laying down the law in a way which only an experienced teacher can do.

WE were in hopes of being able to resume issuing the usual monthly Illustration with this number; but owing to the Doorgah Pujah holidays in Calcutta, the printing of the picture has been unfortunately delayed. We

are therefore reluctantly obliged to issue this number also without a picture, but we can confidently promise a picture in future, beginning with the next number. We hope that members having negatives, which are worth reproducing, will not withhold them any longer. The Editors are powerless in the matter unless members supply them with negatives.

THE present craze for cycling, it is said, has produced a marked effect on amateur photography at home, and camera makers have been crying out against the depression in their receipts, some of which have been diverted into the pockets of the cycle makers. It is quite probable that many beginners have thrown over photography for the "bike." The difficulties of the latter are few and easily mastered, while one has to toil much before satisfying results follow the practice of photography. But those who have seriously taken up photography cannot fail to appreciate the advantages, which the use of the cycle offers, for securing pictures of places and scenes which are otherwise not so easily accessible. This is especially the case for the hand-camera man. To bring the camera into action at short notice, one must be on foot or travelling slowly so that one can get on foot quickly. We have carried a hand-camera day after day, and week after week, in the office gharry—and probably few of us have not done so—but the gharry windows have prevented us seeing the subject in good time, or the gharry-wallah has had a way of not stopping the gharry in time, and so opportunities have slipped away. Besides this, the same road, the same street scenes, and the same blazing sunshine do not often tempt one to travel far on foot. The cycle man, on the other hand, can go a different way every day of the month, he can seek suitable subjects in the villages round about the town, there is nothing to impede a full view of approaching subjects, and he can get off at any moment and prepare to secure his subjects in a way which he cannot do when travelling in a gharry. For short journeys such as these would be, he only needs to carry his hand-camera, and a very little ingenuity will teach him how to buckle the camera on to the cycle handle. As we write these remarks, we wonder whether cycling members of the Society would care to organise morning expeditions for photography in the cold weather.

WE would draw the attention of our members to a letter published in our correspondence columns, containing certain suggestions from C. S. M. for enlarging the scope of the Society's work. They are well worth consideration, and we hope that members will freely express their opinions on the subject and offer any further suggestions which may appear to them to be beneficial. The suggestion that local centres should be formd is one which, if properly worked, cannot fail to call forth the dormant vitality of many of our members. In order that such a scheme may be carried out, it will be necessary to know at what stations there are resident more than one or two members, and whether any one there will undertake the duties of keeping the members at work and of giving them needful help. It will lighten the Honorary Secretary's task if members who are so disposed will communicate with him or with us. In the event of this or any other suggested scheme or schemes appearing practicable, we will place the matter in the hands of the Committee for them to deal with it.

WE recently drew the attention of our readers to what is called the interferential method of photography in natural colours. It was discovered by Professor Lippmann, whose paper on the subject is now published in the Proceedings of the Royal Society, from which we take the liberty of quoting it in full :—

Colour photographs of the spectrum, or of any other object, are obtained by the following method. A *transparent* photographic film of any kind has to be placed in contact with a metallic *mirror* during exposure. It is then developed and fixed by the usual means employed in photography, the result being a *fixed* colour photograph visible by reflected light.

The mirror is easily formed by means of mercury. The glass plate carrying the film being inclosed in a camera slide, a quantum of mercury is allowed to flow in from a small reservoir and fill the back part of the slide, which is made mercury-tight. The plate is turned with its glass side towards the objective, the sensitised film touching the layer of mercury. After exposure, the mercury is allowed to flow back into its seservoir, and the plate taken out for development.

The only two conditions necessary for obtaining colour, transparency of the film and the presence of a mirror during exposure, are physical conditions. The chemical nature of the photographic layer has only secondary importance; any substance capable of giving, by means of an appropriate development, a fixed colourless photograph, is found to give, when backed by the mirror, a fixed colour photograph.

We may take, for instance, as a sensitive film, a layer of albumeno-iodide of silver, with an acid developer; or a layer of gelatino-bromide of silver, with pyrogallic acid, or with amidol, as developers. Cyanide or bromide of potassium may be as usual employed for fixing the image. In a word, the technics of ordinary photography remain unchanged. Even the secondary processes of intensification and of isochromatisation are employed with full success for colour photography.

The photographic films commonly in use are found to be opaque, and formed, in fact, by grains of light-sensitive matter mechanically imprisoned by a substratum of gelatine, albumen, and collodion. What is here wanted is a fully transparent film, the light-sensitive matter pervading the whole of the neutral substratum. How can such a transparent film be realised? This question remained insoluble to me for many years, so that I was debarred trying the above method when I first thought of it. The difficulty, however, is simply solved by the following remark. It is well known that the precipitation of a metallic compound, such as bromide of silver, does not take place in the presence of an organic colloid, such as albumen, gelatine, or collodion. In reality, the metallic compound is formed, but remains invisible; it is retained in a transparent modification by the organic substances. We have only, therefore, to prepare the films in the usual way, but with a stronger proportion of the organic substratum; the result is a transparent film. By mixing, for instance, a gelatinous solution of nitrate of silver with a gelatinous solution of bromide of potassium, no precipitate is formed, and the result is a transparent film of dry gelatine containing 15 and even 30 per cent. of the weight of bromide of silver.

The colours reflected by the film are due to interference: they are of the same kind as those reflected by soap bubbles or by Newton's rings. When a ray of definite wave-length falls on the sensitive plate, it is during exposure reflected back by the mirror, and then gives rise to a set of standing waves in the interior of the film, the distance between two successive loops being equal to half the wave-length of the luminous ray. This system of standing waves impresses its periodical structure on the film. The photographic deposit, therefore, takes the form of a grating, a continuous grating, perfectly adapted for reflecting the particular luminous ray which has given it birth.

This theory can be subjected to experimental proof. If we examine a photograph of the spectrum, or any other object by white light, we observe the following facts. (1) Colours are seen in the direction of specular reflection, and are invisible in every other direction. (2) The colours change with the incidence; the red changing successively to green, blue, and violet, when the incidence grows more oblique. The whole image of the spectrum is displaced, and gradually passes into the infra-red region. (3) If the film be gradually moistened, the colour changes in the opposite direction, from violet to red. This phenomenon is due to the swelling up of the gelatine or albumen, causing the intervals between the elements of the grating to become larger. The smaller intervals, corresponding to violet and blue light, gradually swell up to the values proper to red and infra-red waves. A photograph immersed in water loses all its colours, these appearing again during the process of drying. For the same reason, a freshly prepared plate has to be dried before the correct colours can be finally seen.

We have now to consider the case of compound colours, and to generalise the former theory, which is only applicable to the action of simple rays. I beg to subjoin an abstract of this generalised theory. It will be seen that if a compound ray of definite composition impresses the plate, it gives rise during exposure to a definite set of standing waves, which impress their structure on the film, and impart to the photographic deposit a corresponding definite form. Though very complex, this can be described as made up of a number of elementary gratings, each corresponding to one of the simple rays which contribute the impressing light. When examined by white light, the reflected ray is shown to have the same composition as the impressing ray; white light, for instance, imparts to the photographic deposit such a structure that it is adapted to reflect white light.

The only *a priori* condition for the correct rendering of compound rays, is a correct isochromatisation of the film. This, again, can be practically effected by known processes, such as have been indicated by E. Becquerel, Vogel, Captain Abney, and others.

As a verification of this theory, I beg leave to project on the screen a series of colour photographs, representing natural objects: pictures on stained glass, landscapes from nature, flowers, and a portrait from life. Every colour in nature, including white, and the delicate hue of the human complexion, is thus shown to be reflected by a correctly developed photographic film.

It is to be remarked that, as in the case of the spectrum, the colours are visible only in the direction of specular reflection. If I had tried to touch up these photographs by means of water colours or other pigments, these would be made apparent by slightly turning the photograph; these pigments remaining visible under every incidence, they would thus be seen to stand out on a colourless back ground. Thus the touching up or falsifying by hand of a colour photograph is happily made impossible.

MAXIMS FOR THE AMATEUR.

II.—The Hand-Camera.

There's a little demon 'prisoned
 In an ornamental box;
Which, with knots and screws bedizened,
 All the tyro's efforts mocks.

You will know it in a minute,
 ('Frena,' 'Kodak,' 'Omnigraph');
And you'll own the devil's in it
 When you try to photograph.

For, though simple in its working,
And so harmless to the sight,
There are potencies in lurking
Eager to go wrong as right.

'Tis a magazine all ready
For a round of rapid shots:
See your hand and arm are steady
And your eye the 'finder' spots.

See the film be in position,
And the focus at its best;
If a spark of real ambition
Has been kindled in your breast.

* * * * *

Then, along the billowy ocean,
Or among the marts of men,
You may fix the world of motion
Better than with brush and pen;

Seize the ripple as it borrows
Radiance in the morning-time,
Or the fleeting lights and shadows
Of the human pantomime.

Such you *may* do, very truly,
[Note the accent on the 'may'],
But the chances are, unduly
I'm afraid, the other way;

Till you learn the limitations
Light, and lens, and film impose
On your nicest operations,
(Thorns there are to every rose);

Till a long apprentice serving
In the details of the thing,
Skill and rectitude unswerving
Shall successful issues bring;

Till from formulæ empiric,
Medalled, you shall wing your way;
And rewarding panegyric
In these columns we shall pay.

Then, indeed, a faithful servant
This your chosen art may be;
But be cautious and observant
Lest it gain the mastery.

* * * * *

One more maxim I must utter:—
Ere to 'perpetrate' you go,
Think, before you loose the shutter,
Is the action *comme il faut.*

Or, a world of future trouble
All your enterprise will foil:
Every action has its double,
And there *may* be a recoil.

Thus—you laugh when pictures stealing
Where you never ought to pry:
But there comes a counter-feeling
Should you catch the victim's eye;

For the victim may with passion
Quickly end the interview;
And in very sorry fashion
Damage instrument and you.

* * * * *

So, again, beware of trouble,
Practising your magic art:
Every action has its double,
And recoil may play a part.

C. S. M.

OUR HOME LETTER.

I am doubtful if information about English photographic societies will be found interesting to photographers in India, but I may at least mention the series of six lectures which are being delivered during the next few weeks, in the rooms of the Royal Photographic Society. These lectures have been organized by a committee who recently brought forward successfully a claim for the affiliation of provincial photographic societies with the Royal Society of London. The lectures referred to, after being first delivered in London, will then be placed at the disposal of the aforementioned societies, who can borrow them, together with the slides illustrating them, the object being to assist in furnishing interesting and valuable lectures during the coming winter. The six lectures are as follows:—"Lantern Slide Making" by J. A. Hodges, F.R.P.S., "Negative Making" by Chapman Jones, F.I.C.S., F.C.S., F.R.P.S., "Pictorial Photography" by H. Horsley Hinton, "Architectural Photography" by H. W. Bennett, F.R.P.S., "Intensification and Reduction" by John McIntosh, "Hand Camera Work" by W. Thomas.

It must be a source of satisfaction to all who have the interests of photography at heart, to witness the growing tendency on the part of the public to regard it as an almost essential factor in the education of both men and women. For our own part we look forward to the time when it shall be deemed equally desirable for an acquaintance with photography to be formed in youth as for a knowledge of writing and drawing. Whether it is regarded at the present day as an essential part of one's education or not, it is certainly very largely adopted in schools and colleges as an aid to teaching, more particularly in connection with the optical lantern. The trade in slides is growing enormously, and something will have to be done soon to supply the need for a complete index of all slides obtainable, as at present if a particular subject is needed no end of time is swallowed up in searching through different makers' catalogues for the right thing. Undoubtedly too, there is a very large field

for the preparer of educational slides. In many subjects it is almost impossible to get what one requires, even if the slides are made from drawings. The time will come when many matters will not be accepted as illustrated by drawings, when photographs will be insisted upon, particularly for scientific representations such as occur in geology, geography, &c. "I should like," wrote a teacher recently, "to come across a series of physical maps of each country. There ought to be at least three maps, physical, political, and blank, besides maps of countries. I also use maps showing the winds, ocean currents, &c., and I hope by and by to add geographical maps. I have found it most useful to photograph the diagrams as to map making, the bed of the Atlantic &c., given in a small geography book by Grove. In fact I photograph, when time permits, any picture I think suitable for the purpose, *e.g.*, a bird's-eye view of the Crimea, to illustrate a peninsula or an isthmus, but I do not confine myself to maps and diagrams. Since teaching geography by the lantern I have been accumulating slides of different places of interest, for example, Niagara Falls, Giant's Causeway, and so on, and at the end of the lesson if the class has been attentive, I reward it by throwing on the screen two or three slides, if possible bearing on the subject we have been talking."

Those of us who learnt geography in the way it was taught even twenty years ago can understand the facility and the pleasure of learning it under such conditions. Schoolboys must involuntarily breath a blessing on the fathers of photography, who by their patient experiments and persevering investigations have made these things possible.

The exhibition season is now almost reached, and our best photographers are preparing and framing their pictures with the pleasures of anticipation in expecting to get hung.

In turning over the leaves of an old book I find an extract from *The London Review*, dated about 1860, in which the writer makes the following statement:—"When its processes become more manageable (as much so, in fact as the crayon in the hands of the painter), then will photography approach still nearer to a high place among the fine arts; for, inasmuch as being less dependent on manipulation, there will be more room for the exercise and display of the artistic faculty, every year brings us nearer to this desired consummation." This strikes me as being a singularly true assertion, which time has done much to prove, and will do still more before another thirty years have passed. Notwithstanding the limitations of photography, it has by no means reached its zenith as a method of expressing art. I do not consider that we are within measurable distance so far of having fully developed our capabilities of selection or composition, and as manipulation becomes more and more reduced to a rapid mechanical process, the photographer will be more and more free, as so ably expressed in the extract above, to bring the whole of his attention to the question of selection.

The most important line in apparatus brought out during the month is Messrs. R. & J. Beck's new "Frena" camera to take photographs $3\frac{1}{2}$ by $2\frac{5}{8}$. It is one of the handiest instruments we have seen. The photographs are large enough to be of real value, and the whole camera with its forty films weighs so little, that one might carry it in the hand for hours without feeling tired. For a journalist, a traveller, or a man with whom photography is a secondary consideration it is pre-eminently appropriate.

"Of making books, there is no end" said Shakespeare.* Hardly a week passes without the appearance of some new volume relating to photography. This is true not only in Britain, but in most of the European countries, and also in the United States. A story is told of Alcuin the Monk, journeying as far as Rome, during the time of Charlemagne, for the purpose of buying books to add to the library then established at York. Now probably there are more books relating to the one subject of photography extant, than existed then on all subjects under the sun, and it is no longer necessary to journey further than the depôt of the nearest dealer in photographic supplies in order to purchase. The most important book of the month is "Artistic Landscape Photography" by A. H. Wall, who is author of several other works on art and photography. The book is intended for the use of those who aim at producing more than an ordinary photograph, *e.g.*, a genuine picture.

The weather during August has been very rainy, and dark days have prevailed. Although at noon time last week I exposed a rapid plate five seconds with F/32, it was insufficient, and the negative was almost worthless. Even as I write this, on September 4th, the rain is splashing against the window-panes. The wet weather has already begun to tell on the trees which are shedding their leaves right and left. When next I am able to get out with the camera I expect to find the foreshadowing of winter indicated on all sides.

MATTHEW SURFACE.

PROCEEDINGS OF THE SOCIETY.

Monthly Meeting, held at the Masonic Hall, Mount Road.

Friday, October 2nd, 1896.

Mr. C. Michie Smith, Vice-President, *in the chair.*

The Honorary Secretary read letters from Messrs. Dunsterville and Stoney regretting their inability to attend the meeting, Mr. Stoney sending some lantern slides for the evening.

PROPOSAL OF NEW MEMBER.

Mr. Michie Smith proposed and Mr. R. Ll. Jones seconded—

Mr. J. Carey,

and he was duly elected to be a member of the Society.

* [Solomon has the credit of anticipating this sentiment.—*Ed.*]

194257

The Question Box.

(1) If a photograph is taken during rain, would undue halation be expected, or if present would it possibly be attributed to other causes? Of course no one would select such a condition of the atmosphere for photography, but during the recent floods I took some photographs which I was not likely to be able to get if I waited, and the defect of halation is very marked.

Light is certainly scattered a good deal by falling rain, and this may account to some extent for the strong halation seen in your pictures. At the same time some brands of plates show the defect far more than others.

(2) What is the best plate to use, what exposure should be given, and what light would be preferred, to take a photograph of dogs? I have tried with fair success Ilford Ordinary giving $\frac{1}{40}$ second exposure, first on a bright day in the shade of a building, second in bright sunlight, and third in the open on a bright but slightly overcast day. I think the last was the most successful, but I am not satisfied that I have yet done the best.

A quick plate, sunlight, a large stop, and a short exposure are the best combination for ensuring a good result, *e. g.*, with a 5 inch lens, at 10 feet from the dogs, in sunlight, stop *f*/11, and a Wratten's drop-shutter plate, $\frac{1}{50}$ second should secure what you want.

Pictures for the Day.

Several pictures of "A Building" were shown by H. H. The Elaya Rajah of Travancore, Colonel Stevenson, Vety.-Colonel W. S. Adams, Mr. C. Michie Smith, Sergeant Blaker and Surgeon Major Van-Geyzel.

Sergeant Blaker's picture of the Madras Senate House was very much admired, though some members considered that the glazed surface of the print was unsuitable. The Elayah Rajah of Travancore's print of the Tavalli Palace was also very good. Colonel Stevenson's Building (House: Jersey) is a good bit of composition, the others are not in the same category—all the prints however require trimming badly. It would be, fatal to send prints for exhibition, without trimming even the dark bands which have printed through the clear edges of the negative. "The Lake, Ooty," has an ugly mark in the sky at the top right corner and another large mark across the sky and the water in the centre of the picture. They are probably due to developing marks on the negative, which please examine. "The Badminton Party" is very good, but the print requires trimming badly.

Next Meeting.

The *Picture Subject* is "A Study of Foliage," and there will be a demonstration of how to work the new stripping films and paper negatives.

The picture subject for the month after next will be "A Dog."

Lantern Slides Exhibition.

Slides contributed by Messrs. Michie Smith, Stoney and VanGeyzel, were put through the lantern. A vote of thanks to Dr. VanGeyzel for his trouble in getting up the lantern show closed the meeting.

CORRESPONDENCE.

The Editors of the Journal,

Amateur Photographic Society of Madras.

Dear Sir,—As it seems that the Society of which this Journal is the mouth-piece is, at the present moment, in some little danger of languishing, I beg to make the following suggestions, which I think may be effective, both in enlarging its scope and in increasing its vitality:—

(1) I think it very desirable that the half-yearly and monthly exhibitions and competitions should be made more attractive than at present, and should be more prominently advertised; because it is only by competition among its members that an Amateur Society of this kind can flourish.

(2) I think a resumé of the rules for competing both in the monthly and half-yearly shows should be printed on the last page of every number of the journal; as human nature is apt to forget or mislay the printed slips when moving about in camp, &c.

(3) As regards the monthly exhibitions, I think they might be made in some way competitive, if nothing more than marks were given to the exhibitors. The largest total at the end of the half-year might entitle to a prize or even a medal of some sort. A small fee, say Annas. 8, might be charged on each picture.

(4) I think that, for the sake of up-country members the Society requires a few local sub-centres. What I mean is that some member of the Society should be empowered in his particular station to form a class under the auspices of the Society with the object of getting members to compete at the monthly shows. He would be responsible for collecting pictures and transmitting them in time for each exhibition. In many large stations, such as Ootacamund, there are many amateurs who would be the better for a little organization; their interest in photography would be kept alive by uniting together, and thus they would indirectly support the Society. I feel sure too that these local centres would more than anything attract new members to their own and every one's advantage. The officers of the Society in Madras complain of the lack of interest in the working of the Society exhibited by up-country members. I think the main reason of this is their individual isolation. This is of course in many cases inevitable, but in the case of the larger towns and centres it is a fault easy of cure, I think, on the lines I have indicated. I hope that other up-country members will say something on the subject as to whether they think the suggestions I have made are feasible or not.

Yours truly,
C. S. M.

Ooty,
30th September 1896.

EXTRACTS.

Lantern Slides.

BY J. BARTLETT.

[American Journal of Photography.]

A lawyer once offered to give twenty reasons to the judge for the absence of the prisoner in court. After the announcement of the first, the death of the accused, the judge kindly relieved him of the necessity of an enumeration of the other nineteen. And so when the practical slide-maker is asked in what particular is gelatine inferior to wet collodion as a medium for producing transparencies intended for use in the magic lantern, he will perhaps trump up also twenty objections to gelatine, but the first suffices the enquirer, to wit, slides with gelatine plates do not look as well as those from wet slides when projected upon the screen.

There is apparently a falling off in the virtues of the dry plate when mustered into this special service.

Most of gelatine slides which I have examined thrown upon the screen either show a tameness in the high lights, or, if vigour is secured, it is at the expense of the shadows, which are flat and without gradation.

This is everything but desirable, but probably, admitting the general superiority of collodion, something in the manipulation of the gelatine plate might be held more accountable than the inherent depravity of gelatine itself. I have seen gelatine slides on which it was a delight to look, and on the screen too; but how many a gelatine slide looks perfection itself when examined out of the lantern, a marvel of softness and beauty, but on the screen flat, stale, and unprofitable. Collodion-slide virtues are not always patent to a mere inspection by looking through it. One learns more by experience how to judge of them.

Another objection brought against gelatine slides is the difficulty of securing uniformity of tone.

In collodion the same tone may be had, provided the conditions are the same; but we are not sure that every batch of dry plates will present the same colour. Out of a dozen made with the same plates and developed with the same solution, probably only three or four have the same tone. This is not of much consequence to the amateur, but the commercial-slide maker looks on such capers askance and doubtingly.

Gelatine is so much more convenient, and then we can make slides by contact and at night. It may therefore be acceptable to the amateur to have the experience of one who has worked to try and get what is called a wet-plate effect.

The best results which approach collodion work are produced by making the slide rather thin and then intensifying it.

I at first used bichloride of mercury and cyanide of silver, but resigned it for the following method, which you will recognise as the intensifier which Mr. Cassebaum and I employed to strengthen negatives and which was published in the *American Journal of Photography*. By its use you can strengthen the slide before fixing as well as after, but I prefer to intensify after fixing; it requires more practice to judge how far to carry the strengthening before than after. If you do intensify before fixing, wash out thoroughly all the developer.

Presuming, therefore, that you will strengthen after fixing, I proceed. First:—

Wash out very completely all hypo from the film, then place the slide in a bath composed of

Perchloride of iron	4 grains.
Chrome alum	2 „
Citric acid	4 „
Water	1 ounce.

This solution not only clears up the slide wonderfully by taking off every trace of fog from development, but also removes the last grip of hypo. It also gives a good colour.

The dish containing the solution should be rocked to prevent the formation of a network on the film, which will show itself if you neglect this precaution.

Do not let it be in the iron solution for more than a couple of minutes, until a slight bleaching is perceptible.

After removal wash well under the tap, and then flow it over with the following solution. Do not lay it in the dish, but flow the solution over it, pouring the solution back into the graduate to flow again, as in wet-plate practice; otherwise, one will be apt to stain the plate and also get a dense deposit of silver on the back.

A

Gallic acid (best quality)	80 grains.
Alcohol (95°)	1 ounce.

B.

Nitrate of silver	40 grains.
Water (distilled)	1 ounce.

Take one drachm each of A and B, and three ounces distilled water.

When the plate has built up to your satisfaction, wash it thoroughly and dry it.

Lantern slides so made are quite brilliant, and so look very much like wet plates.

The fine quality is obtained by the gradual and slow action, giving such a fine deposit of silver as cannot be equalled by mercury.

Care should be taken in the manipulation not to touch the film with the fingers. I say this because developers of gelatine plates are apt to rub their fingers over the surface to brush off any impurities.

I would even recommend this method to commercial-slide makers, but they, doubtless, would tell me, "Collodion is cheaper."

I also employed Mr. Cassebaum's mixture of hydroquinone as a slide-intensifier.

STOCK SOLUTION.

Hydroquinone	60 grains.
Nitric acid	2 drops.
Water	6 ounces.

One-half ounce of this stock solution to two ounces of water, and one drachm silver solution (forty grains to one ounce water).

The slide should be first bathed for a few minutes in acid and water (twenty grains citric acid to four ounces water).

The tones are a rich black and the high lights clear, but I prefer the tone of the gallo-silver.

Window transparencies made with it are particularly fine.

Perhaps this last method will recommend itself to beginners, as it does not require so much care as the former; but this acknowledgment does not imply that you are not to exercise all due care and cleanliness. This reminds me to give a word or two of advice in the development of gelatine lantern slides before intensification.

Did you ever look at a Levy lantern slide and delight yourself with its beauty? There is albumen in the plate, and thanks to Mr. Carbutt for his excellent gelatine albumen slow plates—use them by all means—the Levy slide is made by the so-called Taupenot process, and the development is very slow with alkaline pyro, all detail showing first, after an acid pyro developer is applied which builds up or intensifies the image somewhat like the gallo-silver intensifier. The grain in both is very fine. Use slow plates, give full time, and develop with solution much weaker than you would employ in negative development, and gradually build up with the gallo-silver intensifier.

On looking over a large collection of lantern slides, I became interested in examining their keeping qualities. A great many of the gelatine slides showed deterioration. Some had indeed fallen in the "sere and yellow leaf," due, no doubt, to defective fixing or insufficient washing, and might have happened to collodion slides if hypo were as hard to eliminate from it as gelatine Some, both gelatine and collodion, were jaundiced by mercury. I remember some of the *collodion slides* toned with mercury, which at the time of their genesis delighted me with the beauty of their tone. Now how abject, how fallen!

The collodion slides toned with bichloride of palladium were still brilliant. This is perhaps the most delightful toner of wet slides. If you use it, employ it in a very dilute solution and let the toning proceed very slowly.

Among the most durable were wet slides toned with a weak hot solution of sulphide of potassium. The tones are a bluish-black, too cold for most tastes, mine included.

The slides made according to the method here given, despite the predictions of practical photographers, showed not the slightest change; they are about eight years old. Strange to say, some experimental gelatine slides retained their pristine qualities, although they had been toned with bichloride of mercury before fixing. I attribute this to the bath of chloride of ammonia to which they were subjected after the mercury and a good washing after fixing, the ammonium taking up from the film the unappropriated mercury. This might suggest the bathing in chloride of ammonium of a mercury-intensified negative before fixing, if you must use mercury.

Slides in the collection, not toned at all, were amongst the most brilliant, perhaps on account of the greater thickness of the film. They were varnished; perhaps that contributed something to their permanency.—*The British Journal of Photography.*

On the Keeping Qualities of Commercial Orthochromatic Plates.

By W. K. B.

The makers of commercial orthochromatic plates are in the habit of stating that they will keep as long as ordinary plates—plates, that is, ordinary in the matter of colour sensitiveness, and there can be no doubt that the said makers are nearer the mark than are those who state that all orthochromatic plates are almost devoid of keeping qualities—some certainly are, particularly bath plates. We have found plates colour-sensitised with cyanine in a bath by dipping, or floating, to become useless in a few days during hot weather. We have had some experience lately of the keeping qualities of commercial orthochromatic plates, made by the addition of the dye to the emulsion before coating, and think that the conclusions we have arrived at may be of interest, though, on account of want of exact knowledge of the dates at which the plates were made, our statements can be taken as approximations only.

Some time ago a large quantity of plates—several tons weight—was put up to auction in connection with a bankruptcy case. The plates had been so long kept that they were all, to say the least of it, "doubtful." At the same time the conditions of the bankruptcy were such as to make it probable that the plates had been manufactured at about the same time, and that they were about two years old.

We bid systematically the estimated worth of the glass and the silver, with the result that we became the happy possessor of several hundredweights of plates of many different sizes and brands, and, amongst others, of two different makes of orthochromatic plates. One of our principal objects was to discover which of the brands had kept the better, so we were not heartbroken to find that only one batch of the whole lot was in perfect condition. This was a plate of a sensitiveness unusually low for the present day. By comparison with a brand of plates that we were using marked by the H. and D. method, we concluded that they were only about 10 H. and D.

The plates were of very different sensitiveness, and it was certainly remarkable with what uniformity the "ordinary" plates had fallen off in proportion to their sensitiveness. The orthochromatic plates were more sensitive than the very slow ordinaries mentioned, but not nearly as rapid as some of those bought, yet they had fallen off just as much as the rapidest. This confirmed us in an opinion that we had formed before, namely, that orthochromatic plates of moderate sensitiveness keep about as well as ordinary plates of very high sensitiveness. Of course this is far from being an exact statement, but we think it will be found that it is broadly true.

We may mention that the longest time that we have ever kept commercial orthochromatic plates without finding falling off in general quality has been three years, and that in a very trying climate. They were of very moderate sensitiveness, and it is specially to be observed that we say general quality. The reason is that they did take on a very thick crop of insensitive spots. We do not, however, believe that these were due to the orthochromatising.

So much for actual deterioration. Although we admit that the keeping quality of orthochromatic plates, so far as their actual usableness is concerned, is not very much behind that of ordinary plates—is not at all behind, in fact, if some allowance for sensitiveness be made—we have no doubt that the difficulty of working them increases in a comparatively short time, and after a while reaches such a point that, though perfect negatives may be made from the plates, it is only with much difficulty. In the first place, we must explain that circumstances of residence have made it impossible for us at any time to procure perfectly fresh orthochromatic plates of commercial make. Those that we have used have always been at least several months old, and we have never known a commercial orthochromatie plate that would give density without fog as readily as any of several brands of ordinary plates, even of great rapidity, or that would stand as strong a developer. Whether they will do so when really quite fresh is more than we can say.

As an example, we have for about two years been using, for cases where we wished to get the most possible out of a plate, the following, which is a slight modification of the published* formula of a developer that used to be, and possibly still is, sold under the name of crystallos:

Sulphite of soda	$2\frac{1}{2}$	ounces.
Ferrocyanide of potassium (yellow prussiate of potash)	1	"
Hydrokinone	$\frac{1}{4}$	"
Caustic potash (best commercial quality) ...	$\frac{3}{4}$	"
Water	10	"

This is mixed in the proportion of about 1:8 with water for use. Apart entirely from exposure, this developer will produce fog with some plates on account of its extreme energy, but a moderate quantity of bromide of potassium—not more than two grains to the ounce—will render it fit to work any good ordinary commercial plate, but we have not yet found a commercial orthochromatic plate that will stand it, unless with a quantity of bromide much greater than that mentioned, the development being greatly prolonged. Of many developers that we have tried, we have got the best results with commercial orthochromatic plates, using pyro and carbonate of soda well restrained, the quantity of pyro being greater than that commonly used. In fact, the quantity of pyro and of bromide have to be increased just in about the proportion of the plate's life, to be able to get density without fog. In the case

* First published by Mr. C. Skolik.

of some orthochromatic plates of French make that we have recently been using, we found it desirable to use eight grains of pyro, and three of bromide of potassium, to each ounce of developer, the quantity of carbonate of soda—in crystals—being only two and a half per cent. The plates were, we may state, sold as being sensitive to the whole spectrum, though we found the sensitiveness to the deeper red of the spectrum very little more than that of an ordinary plate. The times of development were from ten to fifteen minutes.

Lest there be any misconception, we wish to state that the most scrupulous care was taken in the matter of light. In fact, everything was done in absolute darkness till development was well advanced, when the plate was occasionally examined, for a single second at a time, by light filtered through glass that had been specially selected by the aid of a spectroscope. It would really seem, in this matter, as if there was a difference between ordinary and orthochromatic plates. An ordinary plate seems to keep its normal condition for a certain time, then, very rapidly, in a comparatively short period, to become useless, the fog, which is the most pronounced symptom, being, as a rule, accompanied by inequality of sensitiveness, not to mention spots both transparent and opaque, the former of which, indeed, come most properly under the heading of inequality of sensitiveness. It would seem as if, in the case of orthochromatic plates, a very slow disintegration or degeneration starts at an early period after manufacture, but that this does not render the plates useless, but only more difficult to work the longer they are kept, till at last the difficulty of getting density without fog amounts to impracticability, or inequality of sensitiveness sets in, or we get a crop of opaque spots. It is interesting to speculate as to whether the continuating action of the small quantity of light that *must* be used in the manufacture of the plates has anything to do with this phenomenon.

Of colour screens, both for orthochromatic work in the ordinary sense in which the term is commonly understood, and for the "three colour process," we could write much, as we have been making a number of experiments with screens for both purposes. So far as the three colour process is concerned our experiments are not far enough advanced to enable us to speak with any authority, but we may tentatively state that we have found a set of three screens, a red, a green, and a blue, which are advertised and sold by a well-known American plate-maker, to give the best results that we have so far been able to obtain.

From a famous London optician we received, some little time ago, a pair of circular discs of colourless glass, 4¼in. in diameter, optically ground. We have sealed between these, by the aid of Canada balsam, a film of gelatine coloured with picrate of ammonium, and have found the screen the most satisfactory that we have used for landscape work with orthochromatic plates, though, as pointed out by Captain Abney some little time ago, it must be admitted that the use of orthochromatic plates for landscape is often disappointing. This is especially so in a country like England, where the air never approaches clearness. We have yet to make acquaintance with any orthochromatic plate that gives results markedly better than those got by an ordinary plate, the subjects being landscapes, and no yellow screen being used. With the yellow screen, most markedly better results can be got with some subjects, though there is the probability of disappointment for those who have not given some study and practice to the cases in which the use of an orthochromatic plate with yellow screen is likely to show advantage.

In the matter of copying paintings, it will generally be found better to use yellow light for illuminating than to use a yellow screen if circumstances permit. The light of gas (ordinary not incandescent), paraffin or kerosene lamps, incandescent, electric, and that from various other sources is yellow enough to give a good rendering of pictures with many brands of orthochromatic plates, and the exposure necessary will not be found to be as long as might have been expected.—*Photography.*

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J. L. VanGeyzel, Dare's Gardens, Chetput.
J. L. Walker, Holloway's Gardens, Pantheon Road.
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Ordinary Meetings—*of the Society are held on the first Friday of each month at 6 p.m., and members are at liberty to introduce visitors.*

Letters to the Editor—*should be addressed care of Messrs. Graves, Cookson & Co., Scottish Press, Mount Road Branch, Madras.*

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